

Notes on California Bombyliidae with Descriptions of New Species

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The sun-loving Bombyliidae have always been a favorite group with the writer, as the rather abraded specimens in his earliest collections will bear evidence. California is rich in species of these flies and notes on a few of the interesting forms are given below.

During the past two summers the writer has spent some time in Mill Creek Canyon in San Bernardino County. *Paracosmus morrisoni* O. S. is a very common form in this locality and is usually taken along roads and paths in the bright sunlight. *Aphobantus vittatus* Coq., a trim, beautifully marked little species, occurs along with the above, but is not so common and is often harder to catch. *Villa squamigera* Coq. and *Villa mira* Coq. are not uncommon in the Mill Creek region, the latter species more abundant in August, when it is found out in the sandy river washes. *Villa miscella* Coq. is seldom seen and is quite wary, flying up and down sandy roads for long distances when disturbed. In Glen Martin, in this same general region but at a higher altitude, one occasionally finds *Rhabdoselaphus setosa* Cresson, a little species with a very long proboscis; it is usually taken on the wing in the middle of the day, hovering near the ground. With the first days of autumn specimens of *Villa autumnalis* Cole begin to appear, frequenting the yellow flowers of *Ericameria* and *Chrysothamnus*, and now and then a specimen of the beautiful golden *Lordotus diversus* Coq.

Villa chromolepida new species.

Female. Length 7 mm. Black, clothed with bright iridescent scales; front tibiae without bristles; wings hyaline.

Head rather large in proportion to the body; proboscis pointed and scarcely projecting beyond the oral margin; palpi small, black, cylindrical and black pilose. Antennae black, first joint about twice as long as second and with black pile; third joint twice as long as first two combined and gradually tapering toward apex (see fig. 9), the apical bristle minute. Frons shining black, with erect black pile and sparse golden scales which are purple in certain lights. Face projecting (see fig. 10), shining black, with scales like frons but denser, pile short, black, reclinate. Cheeks shining black, bare of pile or scales. Occiput black, densely clothed with scales like those on face and frons; next the hollowed out back of the head a line of short, fine, yellowish pile.

Mesonotum and scutellum shining black, with golden green scales, purple by reflection; the median portion of dorsum with

erect blackish pile, the front and margins with white pile, stiff and erect just back of the head. Pile of scutellum sparse and white. Pleura shining black, with rather long, dense white pile on the upper mesopleura, the lower part of mesopleura and other pleural plates with sparse black pile, not obscuring the ground color; stiff, blackish bristle-like pile above front coxae. The coxae and pleura with a few scattered iridescent scales. Stem of halteres yellow, the knob white, with a black mark on anterior margin; tuft of pile before halteres largely yellow.

Abdomen black, with erect white pile on sides of first and on anterior corners of second segment; beyond this the pile is very sparse, black, reclinate and scarcely noticeable. On each side of posterior margin of first visible tergite some scales like those on thorax; on the other abdominal tergites and sternites there is a dense covering of tomentum or scales, largely colored like those of thorax and in a definite design on dorsum; in the center of each tergite beyond the first visible one a round spot with sparse black scales, on each side a larger oval spot covered with black scales which have a purplish color in some lights; these lateral spots missing on seventh segment, which is almost wholly covered with iridescent scales. The venter black, with a wide median portion clothed with black tomentum, the sides with iridescent scales as on the more or less telescoped, the last two segments scarcely visible; color of pollen and pile as in male. Apices of femora an ochre dorsum. Femora and bases of tibiae brownish yellow, the rest of legs black; all the spines and pile of legs black, front tibiae without bristles, the anterior tarsi with claws almost as large as on the other tarsi; femora with a few yellowish, iridescent scales and some black ones; tibiae and tarsi with black scales. Wings hyaline, iridescent; the costa and veins at base yellowish, toward posterior margin black; fork of radius rather angular at base. The epaulets with purplish iridescent scales.

Holotype, a female, collected in Mill Creek Canyon, Cal., July 20, 1920 (F. R. Cole), in the collection of the California Academy of Sciences.

The type female is the only specimen known and is not closely related to any species seen by the writer. In Coquillett's table of species it would run to *mercedis*. It is distinct from any described Mexican species.

Amphicosmus vanduzeei new species.

Female. Length 6 mm. A slender species, the body largely shining black, the legs yellow.

Upper two-thirds of frons black, including the large ocellar tubercle, the lower third yellow; pile sparse, fine, white, the narrow orbits silvery pollinose. Face short, projecting, the central portion shining black, sides yellow and with silvery pollen; antennal foveae

deep and connected; first antennal joint slightly longer than second, yellow; second and third joints black, the third joint about as long as the first two combined, narrower (see fig. 6), with a short sub-apical style. Vertex and upper occiput rather full (see fig. 7), black, the lower occiput and cheeks yellow, occiput largely silvery pollinose, the pile minute and whitish.

Mesonotum and scutellum shining black, the pile on median portion of mesonotum and on scutellum short, blackish, on margins of mesonotum white. Humeral callosities yellow, silvery pollinose; a silvery pollinose, white pilose spot just back of humeri. Prescutellar callosities partly yellow. Pleura shining black, the upper mesopleura, the metapleura and hypopleura silvery pollinose and white pilose. Halteres white.

Abdomen largely shining black, rather broad posterior margins of all segments yellowish; apical half of seventh visible segment lemon yellow; yellow on first segment reaches lateral margins, on the second to sixth segments it does not do so. Pile of abdomen very fine, sparse, white, longer on sides of first and second. Venter largely brownish yellow, blackish at base, lemon yellow on genitalia. Femora, tibiae, first tarsal joint, apex of fifth and base of claws honey yellow; third and fourth tarsal joints, apex of second and base of fifth blackish. Coxae and trochanters colored like femora, a black spot below on base of trochanters. Wings hyaline, all veins yellow at base, toward apex and posterior margin blackish. All cells on posterior margin of wing wide open (see fig. 8).

Holotype, a female, collected at Palm Springs, Cal., May 20, 1917 (E. P. Van Duzee), in collection of California Academy of Sciences. The type a unique.

This species differs from *elegans* Coquillett in having the first antennal joint yellow and in the greater extent of black on the abdomen. Coquillett gives no structural characters to distinguish his species. The above described species differs from *cincturus* Williston, from Mexico, in the smaller size and in the color of the antennae and legs, *cincturus* having entirely black legs.

Metacosmus nitidus new species.

Female. Length 5.5 mm. Head black, a small amount of yellow on sides of oral margin. Ocellar tubercle slightly above middle of frons but the lower ocellus nearly in the center; upper half of frons with white pile, the lower part with black; frons shining black, the narrow orbits silvery pollinose. Antennae black, rather short and thick, the second joint larger than first (see fig. 4). Upper face and lower frons near base of antennae silvery pollinose; face short, shining black, distinctly projecting. Occiput thinly gray pollinose, short, sparse white pilose; on the under side, back from mouth opening, an oval yellow spot on each side of middle. Proboscis not projecting beyond oral margin.

Thorax shining black, the dorsum with short, sparse white pile; scutellum shining black, with short white pile. Humeral callosities and lower half of pleura gray pollinose. Stem and under part of knob of halteres blackish, the most of knob white.

Abdomen shining black, finely punctate and with short, sparse whitish pile; hind margins of visible segments one to four narrowly yellowish white, broader on the first. Abdominal pile appears white in certain lights but is largely dark colored. Sternite of seventh segment projects downward in a noticeable triangle as seen in profile. Pile around genitalia rather dense and whitish. Venter black, the hind margins of first five segments yellowish white. Legs wholly black, the pile fine and short. Wings hyaline, rather broad and rounded, the veins black and strong; R2+3 curved slightly forward at tip (see fig. 3).

Holotype, a female, collected at Huntington Lake, Fresno County, California, 7000 feet, July 15, 1919 (E. P. Van Duzee), in the collection of the California Academy of Sciences.

Paratypes.—Two females, taken in the type locality, July 8, 1919, by Mr. E. P. Van Duzee.

This species is evidently near *M. exilis* Coquillett, but differs in the color of the legs and in the wing venation. The only other species in the genus is *manicipennis* Coquillett an eastern form, which has the face and the stems of the halteres white.

Acreotrichus maculipennis new species.

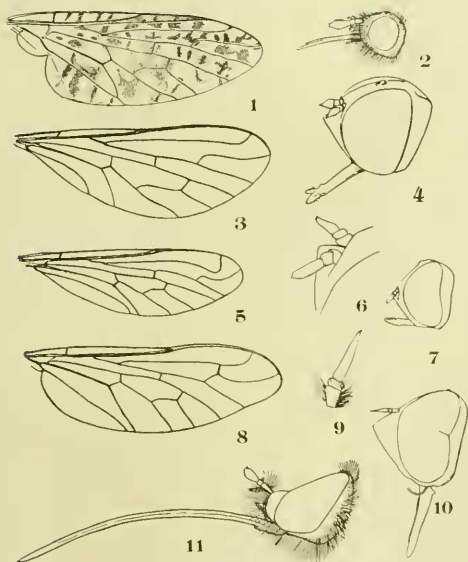
A velvety brown species with thickly spotted wings; the proboscis slightly longer than the head.

Male. Length 4.25 mm. Head black, brownish pollinose, the face and vertex with rather long and erect black pile. Occiput rather flat; occiput and cheeks with black pile. Oral opening large, the antennae placed on the upper edge (see fig. 2); first and second antennal joints rather slender, the first slightly longer than the second, the third slightly longer than the first two combined and considerably widened near the middle, the style short and subapical (see fig. 2); pile on upper side of all antennal joints black. Proboscis black, projecting twice the length of the antennae beyond the oral margin. Palpi black, very slender, with black pile, projecting beyond oral margin about one-third as far as proboscis.

Thorax black; mesonotum velvety black, shading to a sepia brown on the margins; the pile of dorsum erect and yellowish, appearing brown in certain lights. Scutellum velvety black, with comparatively long, coarse yellowish pile. There are indications of two median black vittae on the anterior part of the mesonotum, separated by a fine brown line. Pleura brown pollinose, the sparse

pile on mesa- and sterno-pleura brown. Stem of halteres yellowish, the knob yellow above and blackish brown below.

Abdomen black, sepia brown pollinose, with rather long, erect yellowish pile, nowhere dense enough to obscure the ground color. Venter like the dorsum, the pile shorter and more reclinate. Seventh visible segment projecting over the small eighth, the genitalia quite small, colored like the abdomen, the upper and lower forceps about equal in size and closing over the internal organs. Knees reddish, the rest of legs black; coxae and femora with long black pile. Wings whitish hyaline, densely maculated with dark gray and with remarkable thickenings of the membrane, some of which appear to form supernumerary cross-veins (see fig. 1). The veins near the posterior margin of the wing are wavy.



EXPLANATION OF PLATE

Fig. 1. Wing of *Acrotichus maculipennis* n. sp.; fig. 2, head of *A. maculipennis*; fig. 3, wing of *Metacosmus nitidus* n. sp.; fig. 4, head of *M. nitidus*; fig. 5, wing of *Paracosmus morrisoni* O. S.; fig. 6, antennae and front of head of *Amphicosmus vanduzeei* n. sp.; fig. 7, head of *A. vanduzeei*; fig. 8, wing of *A. vanduzeei*; 9, antenna of *Villa chromolepida* n. sp.; fig. 10, head of *V. chromolepida*; fig. 11, head of *Rhabdoselaphus setosus* Cresson.

Female. In general very much like the male but lighter in coloration. Pile of cheeks and lower occiput yellowish, on the rest of the head and on the antennae reddish brown. Eyes widely separated, the pollen of frons more buff colored than in male, the pile shorter. Pollen of mesonotum much lighter in color than in male, the pile shorter and paler. Ground color of coxae and pleura yellowish brown in some specimens, the pile yellow. Knob of halteres scarcely darkened below. Abdomen in dried specimens yellow, also the tibiae except apices and bases of the four front tarsi. Pile and fine setulae of femora and tibiae yellowish.

Holotype, a male, and *allotype*, a female, collected on the sand dunes near Golden Gate Park, San Francisco, Cal., September 10, 1920 (F. R. Cole), in the collection of the California Academy of Sciences.

Paratypes.—Two specimens in the Cal. Acad. of Sci., taken in the type locality, and five specimens in the writer's collection, taken with the types.

In 1895 Coquillett described *Aercotrichus americanus* from a single male specimen taken in the state of Washington. This little species has hyaline wings, the antennae are quite different and the proboscis comparatively longer. In May, 1917, the writer took a single male specimen of *A. americanus* near Hood River, Oregon; it appears to be a rare species. *A. atratus* Coquillett, from Mexico, has a slender third antennal joint, three times as long as the first two combined and of nearly an equal width; the wings are grayish hyaline. The three other known species in the genus are described from Australia.